



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,634	06/26/2006	Akira Ikeda	1019519-000532	5588
21839 7590 07/09/2010 BUCHANAN, INGERSOLL & ROONEY PC POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404				
EXAMINER				
HON, SOW FUN				
ART UNIT		PAPER NUMBER		
1783				
NOTIFICATION DATE		DELIVERY MODE		
07/09/2010		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com
offserv@bipc.com

Office Action Summary

Application No.

10/584,634

Applicant(s)

IKEDA ET AL.

Examiner

SOPHIE HON

Art Unit

1783

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 13, 30, 31, 40-45 and 60 is/are pending in the application.
- 4a) Of the above claim(s) 30, 31 and 40-45 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 13 and 60 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ ~~Notice of Informal Patent Application~~
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

Withdrawn Rejections

1. The 35 U.S.C. 102(b)/103(a) rejection of claims 1-10, 13, 60-69 over Matsunaga as evidenced by Gunesin is withdrawn due to Applicant's amendment dated 7/08/09.

New Rejections

Claim Rejections - 35 USC § 102/103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1, 13, 60 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Matsunaga (WO 2004/017105 A1), as evidenced by Gunesin (US 4,692,492).

Regarding claim 1, Matsunaga teaches an antireflection film 1 comprising: a transparent support 2; and a low-refractive index layer 5 (page 10, 2nd paragraph, Fig. 1(b)) having a lower refractive index than the transparent support 1 (page 10, 3rd paragraph), wherein the low-refractive index layer is an outermost layer of the antireflection film (page 10, 2nd paragraph, Fig. 1(b)), and the low-refractive index layer comprises a hollow silica particle (page 29, 3rd paragraph), and a silicone compound (page 52, 2nd paragraph). Matsunaga teaches that the low-refractive index layer further comprises a binder, and that the silicone compound comprises a reactive (meth)acryloyl group (page 52, last paragraph) with the binder (page 13, last paragraph), wherein the

binder is a (co)polymer of a monomer having two or more ethylenic unsaturated groups that is an ester of a polyalcohol and a (meth)acrylic acid (dipentaerythritol pentaacrylate and dipentaerythritol hexaacrylate mixture, page 152, 2nd paragraph, ethylene glycol dimethacrylate, page 16, first paragraph).

In addition, Matsunaga teaches that the low-refractive index layer that is an outermost layer of the antireflection film, further comprises a silicone compound that is a polydimethylsiloxane (having a plurality of dimethylsilyloxy units, page 52, last paragraph) that segregates at an outer surface of the low-refractive index layer and provides the surface with slipperiness and stain-proofing (page 52, 2nd paragraph) which, being at the outermost surface of the antireflection film, lowers the surface free energy of the antireflection film, as evidenced by Gunesin.

Gunesin teaches that a silicone compound with low surface free energy (PDMS with a trimethyl siloxy terminal group has a surface free energy of about 21 dyne/cm, column 4, lines 54-60) will diffuse to an outer surface of a layer and segregate there (forming a thin permanent coating, column 4, lines 58-63), lowering the surface free energy of the outer surface of the layer, thus providing the outer surface of the layer with slipperiness and stain-proofing (non-stick and non-staining coating, column 4, lines 53-68).

Furthermore, Matsunaga teaches that the silicone compound comprising silicone-group is added in an amount of 0.1 to 5 weight % (page 52, 2nd paragraph) which is the same amount disclosed by Applicant (page 22, 2nd last paragraph), and is commercially available as X-22-174DX or FM-0725 (page 53, 1st paragraph) which is

the same as disclosed by Applicant (page 23, 1st paragraph). Thus, although Matsunaga, as evidenced by Gunesin, fails to teach that the silicone group is segregated at the outer surface of the low refractive index layer such that a spectral intensity ratio Si/C in a photoelectron spectrum at the outer surface is larger by at least 5 times than that at a depth from the outer surface, the depth being equal to 80% of a thickness of the low refractive index layer, where the claimed and prior art products are identical or substantially identical in structure and composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, and the claimed properties are presumed to be inherent. See MPEP 2112.01. If there were to be any differences in structure or chemistry, these differences are presumed to be minor and obvious in the absence of evidence to the contrary.

Regarding claim 13, Matsunaga teaches that the antireflection layer comprises a layer comprising at least one of a hydrolysate of a compound and a partial condensate of the compound (page 32, last paragraph), the compound being an organosilane that is represented by formula (A) of Applicant (formula 3, page 33, second paragraph, R¹⁰, page 33, 3rd paragraph, X, page 33, last paragraph, m, top of page 34) wherein the hydrolysate and the partial condensate is produced in the presence of at least one of an acid catalyst and a metal chelate compound (page 40, last paragraph).

Regarding claim 60, Matsunaga teaches an antireflection film 1 comprising: a transparent support 2; and a low-refractive index layer 5 (page 10, 2nd paragraph, Fig. 1(b)) having a lower refractive index than the transparent support 1 (page 10, 3rd

paragraph), wherein the low-refractive index layer is an outermost layer of the antireflection film (page 10, 2nd paragraph, Fig. 1(b)), and the low-refractive index layer comprises a hollow silica particle (page 29, 3rd paragraph), and a silicone compound (page 52, 2nd paragraph). Matsunaga teaches that the low-refractive index layer further comprises a binder and that the silicone compound comprises a reactive (meth)acryloyl group (page 52, last paragraph) with the binder (page 13, last paragraph), wherein the binder is a (co)polymer of a monomer having two or more ethylenic unsaturated groups that is an ester of a polyalcohol and a (meth)acrylic acid (dipentaerythritol pentaacrylate and dipentaerythritol hexaacrylate mixture, page 152, 2nd paragraph, ethylene glycol dimethacrylate, page 16, first paragraph). Matsunaga teaches that the low-refractive index layer that is an outermost layer of the antireflection film, further comprises a silicone compound that is a polydimethylsiloxane (having a plurality of dimethylsilyloxy units, page 52, last paragraph) that segregates at an outer surface of the low-refractive index layer and provides the surface with slipperiness and stain-proofing (page 52, 2nd paragraph) which, being at the outermost surface of the antireflection film, lowers the surface free energy of the antireflection film to one that is within a range of at most 25 mN/m, as evidenced by Gunesin.

Gunesin teaches that a silicone compound that is a polydimethylsiloxane having a low surface free energy of about 21 mN/m (PDMS with a trimethyl siloxy terminal group, column 4, lines 54-60, PDMS is short for polydimethylsiloxane) will diffuse to an outer surface of a layer and segregate there (forming a thin permanent coating, column 4, lines 58-63), lowering the surface free energy of the outer surface of the layer, thus

providing the outer surface of the layer with slipperiness and stain-proofing (non-stick and non-staining coating, column 4, lines 53-68).

Response to Arguments

3. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication should be directed to SOPHIE HON whose telephone number (571)272-1492. The examiner can normally be reached Monday to Friday from 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample, can be reached on (571)272-1376. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Sophie Hon

Sow-Fun Hon

Examiner, Art Unit 1794